REMARKS

Claims 46-64 are pending; claims 46-55 are withdrawn; and claims 56-64 are rejected in this application. Claim 56 is amended; and claim 65 is added hereby.

Responsive to the objection to the specification under 35 U.S.C. § 112, first paragraph, Applicants have amended the specification to clearly recite, what is claimed and shown in the figures. Specifically, Fig. 14, which is another view of Fig. 34, illustrates the structure recited in the claims and described in the amended specification; therefore no new matter has been added by this amendment to the specification.

Responsive to the rejection of claims 56-64 under 35 U.S.C. § 112, first paragraph, Applicants have amended the specification to further describe the figures so as to convey to one skilled in the art that the structure illustrated in the figures was in possession of the Applicants at the time the application was filed. Applicants submit that the limitations of claims 56-64 are now described in the specification, and that the limitations were a reflection of the figures of the application as originally filed. For the foregoing reasons Applicants submit that claims 56-64 are now in condition for allowance, which is hereby respectfully requested.

Responsive to the rejection of claims 56-58, 63 and 64 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,207,634 (Greenstein), Applicants have amended claim 56, and submit that claims 56-58, 63 and 64 are now in condition for allowance.

Greenstein discloses a self-balanced apparatus and method for a centrifuge device (Figs. 1-9) the self-balancing apparatus 10 is illustrated in Fig. 1. Apparatus 10 includes a rotating platter or rotor 12 having a plurality of assay cassette receptacles 14 for receiving assay cassettes. The assay cartridges are processed by a technique employing centrifugal force, incubation and agitation under controlled conditions of magnitude and duration. Maldistribution causes a

substantial dynamic imbalance in the rotor, which may spin at speeds up to 10,000 rpm for certain assays. In order to compensate for potential imbalances caused by non-symmetrical distributions of cassettes received in cassette receptacles 14, rotor 12 is provided with a counter weight mechanism 20 (column 4, line 10 through column 5, line 11). The Examiner has indicated that the word filter includes rotary members that are capable of separating a substance into different phases or densities within a broad meaning of the term (Office Action, page 2).

In contrast, claim 56 as amended, recites in part:

> said filter having an end with holes extending through said end, said holes being displaced from said axis of rotation, the fluid being in fluid communication with a portion of said inner surface of said non-rotating filter housing and with said filter;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Greenstein or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Greenstein discloses a self-balanced apparatus and method for a centrifuge device including assay cartridges that are objected to centrifugal force. Applicants do not agree with the Examiner's broad definition of the word "filter" and specifically have not found any dictionary that supports the Examiner's position. Nonetheless, Applicants have further amended claim 56 to indicate that the fluid goes through holes in the end of the filter and that the fluid is in fluid communication with the filter and an inner surface of the non-rotating filter housing. Therefore, Greenstein and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter having an end with holes extending through the end, the holes being displaced from the axis of rotation, the fluid being in fluid communication with a portion of the inner surface of the non-rotating filter housing and with the filter, as recited in claim 56.

An advantage of Applicants' invention is that the high-speed rotation of the filter causes soot and other particles, which may be present in the oil, to be accelerated against a wall of the filter media and to gather in portions of a sheet therein. Another advantage of Applicants' invention is that the fluid is in contact with the rotating filter media as well as the non-rotating filter housing. Yet another advantage of the present invention is that the fluid is centrifugally flung from the holes on the end of the filter against the non-rotating housing then allowing the oil then to flow to the bottom of the non-rotating housing. The combination of the flow of the fluid in a part of the filet assembly, and the speed of rotation of the filter media cause there to be a vacuum between the filter media and the fluid that is in contact with the wall of the filter housing, thereby reducing the energy required to rotate the filter. For the foregoing reasons, Applicants submit that claim 56, and claims 57, 58, 63 and 64 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

Responsive to the rejection of claims 56, 57, 63 and 64 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,160,609 (Van Der Herberg), Applicants have amended claim 56 and submit that claims 56, 57, 63 and 64 are now in condition for allowance.

Van Der Herberg discloses a centrifugal separator with discharge of separated constituents by breaking moment (Figs. 1-10) including a separator 1 having a tubular frame 2. A drum 3 is rotatably mounted within tubular frame 2. At the top end of drum 3 there is a shaft 7, which is mounted to a bearing 5 fitted onto frame 2. Shaft 7 is coupled by way of a coupling 8 to a controlled electrical DC motor 4. A liquid containing constituents for separation is supplied by way of conduit 10 and is carried to the interior of separator drum 3 (column 3, line 61 through column 4, line 16).

In contrast, claim 56 as amended, recites in part:

said filter having an end with holes extending through said end, said holes being displaced from said axis of rotation, the fluid being in fluid communication with a portion of said inner surface of said non-rotating filter housing and with said filter;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Van Der Herberg or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Van Der Herberg discloses a centrifugal separator with a discharge of separated constituents by breaking moment including a rotatable drum mounted within a tubular frame. The construct of the separator of Van Der Herberg includes a fluid that is not in fluid communication with a non-rotating outer housing since drum 3 is the outer housing and it is rotated by DC motor 4. Applicants' invention causes the fluid to be in fluid communication with an inner surface of a non-rotating housing and with the filter. Holes in the end of the filter are positioned to cause the fluid to centrifugally leave the filter. Therefore, Van Der Herberg and any of the other cited references alone or in combination fail to disclose, teach or suggest a filter having an end with holes extending through the end, the holes being displaced from the axis of rotation, the fluid being in fluid communication with a portion of the inner surface of the non-rotating filter housing and with the filter, as recited in claim 56.

An advantage of Applicants' invention is that the high-speed rotation of the filter causes soot and other particles, which may be present in the oil, to be accelerated against a wall of the filter media and to gather in portions of a sheet therein. Another advantage of Applicants' invention is that the fluid is in contact with the rotating filter media as well as the non-rotating filter housing. Yet another advantage of the present invention is that the fluid is centrifugally flung from the holes on the end of the filter against the non-rotating housing then allowing the oil then to flow to the bottom of the non-rotating housing. The combination of the flow of the fluid

in a part of the filet assembly, and the speed of rotation of the filter media cause there to be a vacuum between the filter media and the fluid that is in contact with the wall of the filter housing, thereby reducing the energy required to rotate the filter. For the foregoing reasons, Applicants submit that claim 56, and claims 57, 63 and 64 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

Responsive to the rejection of claims 56-58, 63 and 64 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,656,164 (Vado et al.) in view of U.S. Patent No. 5,892,307 (Pavlovich et al.), Applicants have amended claim 56 and submit that claims 56-58, 63 and 64 are now in condition for allowance.

Vado et al. discloses a compact apparatus for centrifugal separation including a housing 2 and a motor 3 (Figs. 1 and 2). There are channels 12 and a housing 2, which allow the entrance of a liquid that is to be centrifuged. The liquid, such as engine fuel oil, along with its impurities and water enter through channels 12 and goes into cartridge 9, which is rotating with shaft 6 of motor 3. The heavier liquid, which is the water, remains within the cartridge, while the lighter liquid, the fuel oil, passes through channels 7 and 8 to be sent to the boat engine. Filter 11 eliminates solid impurities (column 2, line 41 through column 3, line 5).

Pavlovich et al. discloses a brushless DC motor (Fig. 1) including an upper part 1, a middle part 2 and a lower part 3. A composite rotor assembly includes three disks 4, 5 and 6 and is rigidly fixed to shaft 7. Shaft 7 is supported by bearings 8, which are mounted in upper part 1 and lower part 3 of the housing assembly. Each disk 4, 5 and 6 consists of twelve permanent magnets 9 of alternate polarity, which are magnetized in an axial direction (column 5, lines 23-32).

In contrast, claim 56 as amended, recites in part:

> said filter having an end with holes extending through said end, said holes being displaced from said axis of rotation, the fluid being in fluid communication with a portion of said inner surface of said non-rotating filter housing and with said filter;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Vado et al. or Pavlovich et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Vado et al. discloses a compact apparatus for centrifugal separation including a housing in a motor. The motor of Vado et al. rotates an inner housing within a non-rotating outer housing and the fluid is not in contact with a substantial portion of an inner surface of the non-rotating outer housing. Pavlovich et al. discloses a brushless DC motor. In contrast, Applicants' invention causes the fluid to be in fluid communication with a portion of the inner surface of the outer non-rotating housing and the filter. Holes in the end of the filter are positioned to cause the fluid to centrifugally leave the filter. Therefore, Vado et al., Pavlovich et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter having an end with holes extending through the end, the holes being displaced from the axis of rotation, the fluid being in fluid communication with a portion of the inner surface of the non-rotating filter housing and with the filter, as recited in claim 56.

An advantage of Applicants' invention is that the high-speed rotation of the filter causes soot and other particles, which may be present in the oil, to be accelerated against a wall of the filter media and to gather in portions of a sheet therein. Another advantage of Applicants' invention is that the fluid is in contact with the rotating filter media as well as the non-rotating filter housing. Yet another advantage of the present invention is that the fluid is centrifugally flung from the holes on the end of the filter against the non-rotating housing then allowing the oil then to flow to the bottom of the non-rotating housing. The combination of the flow of the fluid

in a part of the filet assembly, and the speed of rotation of the filter media cause there to be a vacuum between the filter media and the fluid that is in contact with the wall of the filter housing, thereby reducing the energy required to rotate the filter. For the foregoing reasons, Applicants submit that claim 56, and claims 57, 58, 63 and 64 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

Responsive to the rejection of claims 56, 58-61, 63 and 64 under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 2,745,217 (Gold et al.) in view of Pavlovich et al., Applicants have amended claim 56 and submit that claims 56, 58-61, 63 and 64 are now in condition for allowance.

Gold et al. disclose a machine for improving the keeping quality of plants and restoring wilted plants to full freshness (Fig. 5) including a drum 17 having an inner casing 16, which is of generally cylindrical formation although tapering somewhat from the top to the bottom. At its upper edge it is radially extending flange 21, which extends beyond the periphery of the inner casing and is curved downwardly at the edge. Drum 17 is secured to a circular flange 22 provided on sleeve 23, which is fixed to an upper end of shaft 24 (column 2, lines 5-14).

In contrast, claim 56 as amended, recites in part:

> said filter <u>having an end with holes</u> extending through said end, said holes being displaced from said axis of rotation, the fluid <u>being in fluid communication with a portion of said inner surface</u> of said non-rotating filter housing and with said filter;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Pavlovich et al. or Gold et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Pavlovich et al. discloses a brushless DC motor. Gold et al. discloses a machine for improving the keeping quality of plants and restoring molted plants to full freshness including a

drum 17 in an inner casing 16 both of which are rotatable. Neither Gold et al. nor Pavlovich et al. include elements for a filter assembly for filtering contaminants from a fluid used in an internal combustion engine. Further, the drum and inner casing of Gold et al. rotate, being driven by a motor. Gold et al. does not disclose a non-rotating outer housing in fluid communication with a fluid that also is in contact with an inner rotating filter. Applicants' invention causes the fluid to be in fluid communication with an inner surface of a non-rotating housing and with the filter. Holes in the end of the filter are positioned to cause the fluid to centrifugally leave the filter. Therefore, Gold et al, Pavlovich et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter having an end with holes extending through the end, the holes being displaced from the axis of rotation, the fluid being in fluid communication with a portion of the inner surface of the non-rotating filter housing and with the filter, as recited in claim 56.

An advantage of Applicants' invention is that the high-speed rotation of the filter causes soot and other particles, which may be present in the oil, to be accelerated against a wall of the filter media and to gather in portions of a sheet therein. Another advantage of Applicants' invention is that the fluid is in contact with the rotating filter media as well as the non-rotating filter housing. Yet another advantage of the present invention is that the fluid is centrifugally flung from the holes on the end of the filter against the non-rotating housing then allowing the oil then to flow to the bottom of the non-rotating housing. The combination of the flow of the fluid in a part of the filet assembly, and the speed of rotation of the filter media cause there to be a vacuum between the filter media and the fluid that is in contact with the wall of the filter housing, thereby reducing the energy required to rotate the filter. For the foregoing reasons, Applicants

submit that claim 56, and claims 58-61, 63 and 64 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

Responsive to the rejection of claims 56 and 58-64 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,904,841 (Penny) in view of Pavlovich et al., Applicants have amended claim 56, and submit that claims 56 and 58-64 are now in condition for allowance.

Penny discloses a fluid circulation centrifugal cleaner with pressure regulator (Figs. 1a and 2a) including a base 11, a rotor 12 and a housing 14. Rotor 12 is mounted on a substantially vertical axis 13 for rotation thereabout. A fluid inlet passage 16 is arranged to supply fluid at an elevated pressure to the interior of rotor 12 by way of rotation axis 13 and a fluid drain passage 17. Supply fluid is forced outwardly by rapid rotation of rotor 12 due to the reaction of the ejection of the supply fluid to sump 15 by way of rotor nozzles 18 and 19 in the base thereof (column 1, lines 23-38).

In contrast, claim 56 as amended, recites in part:

> said filter having an end with holes extending through said end, said holes being displaced from said axis of rotation, the fluid being in fluid communication with a portion of said inner surface of said non-rotating filter housing and with said filter;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Pavlovich et al. or Penny or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Penny discloses a fluid circulation centrifugal cleaner with pressure regulator including a rotor mounted on a substantially vertical axis for rotation thereabout. Pavlovich et al. discloses a brushless DC motor. Housing 14 of Penny is not in contact with fluid being rotated within rotor 12. In contrast, Applicants' invention causes the fluid to be in fluid communication with an inner surface of a non-rotating housing and with the filter. Holes in the end of the filter are positioned

to cause the fluid to centrifugally leave the filter. Therefore, Penny, Pavlovich et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter having an end with holes extending through the end, the holes being displaced from the axis of rotation, the fluid being in fluid communication with a portion of the inner surface of the non-rotating filter housing and with the filter, as recited in claim 56.

An advantage of Applicants' invention is that the high-speed rotation of the filter causes soot and other particles, which may be present in the oil, to be accelerated against a wall of the filter media and to gather in portions of a sheet therein. Another advantage of Applicants' invention is that the fluid is in contact with the rotating filter media as well as the non-rotating filter housing. Yet another advantage of the present invention is that the fluid is centrifugally flung from the holes on the end of the filter against the non-rotating housing then allowing the oil then to flow to the bottom of the non-rotating housing. The combination of the flow of the fluid in a part of the filet assembly, and the speed of rotation of the filter media cause there to be a vacuum between the filter media and the fluid that is in contact with the wall of the filter housing, thereby reducing the energy required to rotate the filter. For the foregoing reasons, Applicants submit that claim 56, and claims 58-64 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

Claim 65 has been added to further protect Applicants' valuable intellectual property rights. The contents of the claim limits the location of the holes of the end of the filter to being approximately half-way between the axis of rotation and the outer surface of the filter, which is supported by the figures and the amended specification. No new matter has been added by the inclusion of new claim 65 since the figures of the application, as originally filed, include holes that are located approximately half-way between the axis of rotation and the outer surface of the

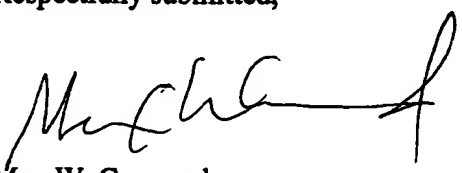
filter. Applicants respectfully request the examination of new claim 65 and the allowance thereof.

For the foregoing reasons, Applicants submit that the pending claims are definite and do particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Moreover, Applicants submit that no combination of the cited references teaches, discloses or suggests the subject matter of the amended claims. The pending claims are therefore in condition for allowance, and Applicants respectfully request withdrawal of all rejections and allowance of the claims.

In the event Applicants have overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional payment of fee, Applicants hereby conditionally petition therefor and authorize that any charges be made to Deposit Account No. 20-0095, TAYLOR & AUST, P.C.

Should any question concerning any of the foregoing arise, the Examiner is invited to telephone the undersigned at (260) 897-3400.

Respectfully submitted,



Max W. Garwood
Registration No. 47,589
Attorney for Applicant

TTT6/dc/lp

TAYLOR & AUST, P.C.
142 S. Main Street
P.O. Box 560
Avilla, IN 46710
Telephone: 260-897-3400
Facsimile: 260-897-9300

Enc.: Return postcard

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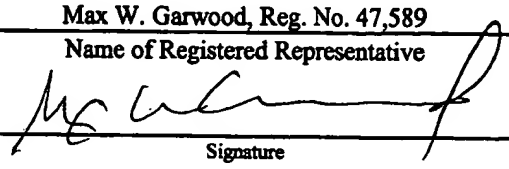

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